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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/059,364	01/31/2002	Matthew B. Hoyt	1005-189	8962

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EXAMINER	
JUSKA, CHERYL ANN	

ART UNIT	PAPER NUMBER
1771	

DATE MAILED: 06/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No.	Applicant(s)	
	10/059,364	HOYT ET AL.	
	Examiner	Art Unit	
	Cheryl Juska	1771	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04/17/06 (Remand from Board)*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *20,21,23 and 25-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *20,21,23 and 25-27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. In view of the Remand by the Board of filed on April 17, 2006, PROSECUTION IS HEREBY REOPENED. A new 112, 2nd rejection is set forth below, while the 103 rejections and response to arguments are maintained from the Examiner's Answer.

2. To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

3. A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below.

TERREL MORRIS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 20 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 20 fails to recite an upper limit for the amine end group (AEG) content (i.e., "between about 10 meq/kg). Thus, the AEG content range is unclear.

Claim Rejections - 35 USC § 103

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7. Claims 20, 23, and 25-27 are rejected under 35 USC 103(a) as being unpatentable over US 4,069,363 issued to Segraves et al. in view of US 5,447,794 issued to Lin.

Appellant claims a stain-resistant, acid-dyed nylon filament having a core and a sheath which surround entirely said core and is present in an amount of less than 10 wt.% of said filament. The core is formed of a nylon polymer having an amine end group concentration (AEG) of about 10-100 meq/kg and is susceptible to dyeing by an acid dyebath. The sheath is formed of a nylon polymer which is resistant to dyeing by said acid dyebath. Said filament is dyed such that said acid dyebath physically diffuses or migrates through said nylon sheath to dye the core while leaving the sheath substantially undyed.

The sheath is preferably 3-10 wt.% of the filament, while the core is preferably 90-97 wt.% of the filament. The sheath preferably has an AEG concentration of less than about 5 meq/kg. The sheath polymer is preferably a nylon 6/12 homopolymer while the core polymer is nylon 6, nylon 6/12, nylon 11, nylon 6/6, nylon 6/10 or copolymers or blends thereof.

Segraves discloses a nylon bicomponent fiber comprising a sheath of nylon homopolymer and a core of a copolymer hexamethylene dodecanedioamide (nylon 6/12) and epsilon-caproamide (nylon 6) (abstract and col. 1, lines 57-63). The sheath homopolymer may be nylon 6/12, nylon 6/6, or nylon 6 (col. 3, line 67-col. 4, line 4). Upon acid dyeing the

sheath/core fiber, the dye is predominantly taken up by the core polymer, leaving the nylon homopolymer sheath light in color (col. 4, lines 16-24).

Segraves fails to explicitly teach a sheath/core ratio range of 3/97 wt.% to 10/90 wt.%. However, the claimed range is well-known in the art. For example, the Lin patent is directed to sheath/core polyamide filaments useful in carpet constructions that are resistant to staining by coffee and acid dyes common in beverages. The sheath component is comprised of nylon 6,12, nylon 12, nylon 6,10, or nylon 11 and the core may be nylon 6,6, nylon 6, or copolymers thereof. (Title; Abstract; and col. 1, lines 5-11 and 42-64). The weight ratio of the sheath component to the core component is in the range of 10:90 to 80:20 (col. 1, lines 35-42). Hence, it would have been obvious to one of ordinary skill in the art to employ the presently claimed sheath/core ratio of about 10/90 wt.% as taught by Lin in the Segraves invention in order to produce a successful uniform sheath/core nylon filament for carpet constructions comprising a low amount of sheath polymer, which would reduce the amount of cost for the sheath polymer and/or reduce the thickness of the fiber.

Additionally, Lin exemplifies a nylon 6/6 core polymer having an AEG concentration of about 50 meq/kg, but is silent with respect to said concentration for the sheath polymer (col. 5, lines 5- 17). However, Lin's goal is to produce a nylon bicomponent fiber that is resistant to staining by coffee and acid dyes found in food and beverages. Although Segraves does not explicitly teach an AEG concentration of the sheath or core nylon, it is asserted that the claimed AEG concentrations are met by the Segraves disclosure, or at least, readily obvious over the prior art. Specifically, the core of Segraves is easily dyeable, while the sheath remains light in color or substantially undyed when dyed by an acid dyebath. As one skilled in the art readily knows, by definition, an acid-dyeable or anionic nylon has to have sufficient amine end groups available for reaction with the acid dye, while a cationic or basic-dyeable nylon has insufficient amine end groups to be dyed by acid dyes. To one skilled in the art, this means that the easily dyeable core nylon of Segraves must have a large number of amine end groups available as acid dyesites (i.e., a high AEG concentration), while the light in color or substantially undyed sheath must have very few amine end groups or acid dyesites available (i.e., a low AEG concentration). Hence, it is argued that even if the nylons of the Segraves patent do not possess the claimed AEG concentrations, it would have been readily obvious to one skilled in the art to select the nylon polymers inherently having the desired AEG concentration or to modify said nylon polymers to have the desired number of available amine end group dyesites in order to increase or decrease the dyeability of the polymer. In other words, one skilled in the art understands that to successfully make the Segraves invention, the core nylon polymer must have a relatively high AEG concentration (e.g., about 10-100 meq/kg), while the sheath nylon polymer must have a relatively low AEG concentration (e.g., less than about 10 meq/kg). Therefore, claims 20, 23, and 25-27 are rejected as being obvious over the prior art.

8. Claim 21 is rejected under 35 USC 103(a) as being unpatentable over the cited Segraves and Lin patents, as applied to claim 20 above and in further view of US 4,075,378 issued to Anton et al. or US 5,468,555 issued to Lijten.

Claim 21 limits the filament to being a trilobal filament.

Neither Segraves nor Lin disclose trilobal filaments. However, it is well-known in the art to have trilobal cross-sectional shapes in bicomponent carpet filaments for the purposes of increasing bulk and improving soiling characteristics. For example, Lijten teaches sheath/core trilobal filaments are desirable in carpet fibers (col. 3, lines 10-21). Additionally, Anton discloses a sheath/core polyamide fiber comprising an acid-dyeable nylon core surrounded by a basic-dyeable nylon sheath (abstract). The filaments may have a round cross-section or may be trilobal (col. 3, lines 51-54). Hence, it would have been instantly obvious to one of ordinary skill in the art to practice the conceptual invention of Segraves and Lin as applied to claim 20 with trilobal filaments, motivated by the expectation of providing a higher quality fiber due to increased yarn bulk, improved soiling characteristics, and desirable visual characteristics. Therefore, claim 21 is rejected as being obvious over the cited prior art.

9. Claims 20, 21, 23, and 25-27 are rejected under 35 USC 103(a) as being unpatentable over US 4,075,378 issued to Anton et al. in view of the cited Lin patent.

Anton discloses a sheath/core polyamide fiber comprising an acid-dyeable nylon core surrounded by a basic-dyeable nylon sheath (abstract). The sheath nylon has aromatic sulfonate groups blocking the amine end groups (abstract). Thus, the fiber is able to be cross-dyed with different acid and basic dyes to produce varying color effects. Anton teaches a variety of shades are obtained in the acid-dyeable nylon by varying the AEG concentration (col. 2, lines 13-20). The sheath/core ratio ranges from 40/60 to 60/40 (col. 2, line 65-col. 3, line 1). In order to be sufficiently acid-dyeable, the core nylon should have an amine end group concentration of 40-100 meg/kg of polymer (col. 2, lines 27-41). The basic-dyeable sheath has about 15-40 meq/kg of polymer, but is not acid-dyeable (col. 2, lines 42-47). The filaments may have a round cross-section or may be trilobal (col. 3, lines 51-54). Anton teaches suitable nylons include poly(hexamethylene adipamide) (nylon 6/6), polycaprolactam (nylon 6), and poly(hexamethylene sebacamide) (nylon 6/10) (col. 3, lines 3-15).

Thus, Anton teaches the present invention with the exception of (a) the claimed sheath/core ratio and (b) the sheath AEG concentration of less than 10 meq/kg. With respect to the former, Anton fails to explicitly teach a sheath/core ratio range of 3/97 wt.% to 10/90 wt.%. However, the claimed range is well-known in the art. For example, as discussed above, the Lin patent is directed to sheath/core polyamide filaments useful in carpet constructions. The weight ratio of the sheath component to the core component is in the range of 10:90 to 80:20 (col. 1, lines 35-42). Hence, it would have been obvious to one of ordinary skill in the art to employ the presently claimed sheath/core ratio of about 10/90 wt.% as taught by Lin in the Anton invention in order to produce a successful uniform sheath/core nylon filament for carpet constructions comprising a low amount of sheath polymer, which would reduce the amount of cost for the sheath polymer and/or reduce the thickness of the fiber.

With respect to the latter, Anton does teach a relatively low AEG concentration for the sheath polymer (i.e., 15-40 meq/kg), but fails to teach the very low value claimed by appellant (i.e., less than about 10 meq/kg). However, as is known in the art and evidenced by Anton, the

degree of acid dyeability of nylon is a result effective variable dependent upon the AEG concentration (col. 2, lines 13-20). As such, it would have been readily obvious to one skilled in the art to manipulate the AEG concentration to the range claimed by appellant in order to produce a sheath polymer that remains substantially undyed when dyed by acid dyes, but remains basic dyeable, as is desired by Anton. It has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 205 USPQ 215. Therefore, claims 20, 21, 23, 25, and 27 are rejected as being obvious over the cited prior art.

With respect to claim 26, Anton fails to explicitly teach nylon 6/12 as the sheath nylon polymer. However, the use of nylon 6/12 is known in the art for sheath components of bicomponent fibers. For example, Lin teaches nylon 6/12 as a suitable nylon polymer for the sheath of the bicomponent nylon carpet fiber having reduced staining by acid dyes (col. 2, lines 6-8). Hence, it would have been obvious to one skilled in the art to substitute the nylon 6/12 for the nylon 6/6 exemplified by Anton for the sheath of the bicomponent fiber (col. 4, lines 50-54). It has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use. *In re Leshin*, 125 USPQ 416. Therefore, claim 26 is also rejected.

10. Claims 20, 23, and 25-27 are rejected under 35 USC 103(a) as being obvious over the cited Lin patent in view of US 5,340,886 issued to Hoyt et al. and in further view of the cited Segraves patent.

The Lin patent is directed to sheath-core polyamide filaments useful in carpet constructions that are resistant to staining by coffee and acid dyes common in beverages. The sheath component is comprised of nylon 6/12, nylon 12, nylon 6/10, or nylon 11 and the core may be nylon 6/6, nylon 6, or copolymers thereof. (Title; Abstract; and col. 1, lines 5-11 and 42-64). The weight ratio of the sheath component to the core component is in the range of 10:90 to 80:20 (col. 1, lines 35-42). Additionally, Lin teaches one embodiment comprising a nylon 6/12 sheath and a nylon 6/6 core, wherein the nylon 6/6 core polymer has an AEG concentration of about 50 meq/kg (col. 5, lines 5-17).

Thus, Lin teaches the limitations of appellant's claims 20, 23, and 25-27 with the exceptions of (a) the sheath having an AEG concentration of less than about 10 meq/kg, (b) dyeing the sheath/core fiber in an acid dyebath, and (c) the sheath remaining substantially undyed in the acid dyebath. However, it is asserted that these limitations are obvious over the cited Lin patent in view of Hoyt and Segraves.

Hoyt teaches acid-dye resistant polyamide fibers comprising a nylon polymer having amine end groups blocked with a chemical blocking agent (abstract). Suitable polyamides are nylon 6, nylon 6/6, nylon 6/12, and nylon 12 (col. 4, lines 26-29). By blocking the AEG's with a blocking agent the available acid dye sites are reduced, thereby making the fiber acid dye resistant (col. 6, lines 38-47). In other words, the nylon is resistant to being dyed by acid dyes in a dyebath and to being stained by acid dyes such as those found in food products. The nylon

fibers treated with a blocking agent have titratable AEG concentrations of less than 25 meq/kg, while lightly colored nylons (i.e., substantially undyed by acid dyes) may have concentrations in the range of 2-20 meq/kg (col. 7, lines 3-17).

Thus, it would have been obvious to one skilled in the art to employ a nylon treated with a blocking agent as taught by Hoyt for the sheath component of the Lin invention. Motivation to do so would be to further enhance the Lin fiber's resistance to acid dyes by blocking the amine end group acid dye sites. In modifying the sheath of the Lin fiber with the Hoyt nylon, the present limitations of the core polymer being dyed while the sheath polymer remains substantially undyed is automatically met since the majority of the available dye sites of the sheath polymer, as measured by the AEG concentration, are blocked.

The disclosures of Lin and Hoyt do not explicitly teach dyeing the nylon bicomponent fibers. However, dyeing of carpet fibers is common in the art. Additionally, as discussed above, Segraves teaches dyeing a sheath/core polymer wherein the dye penetrates into the core polymer but leaves the sheath essentially undyed. Thus, it would have been obvious to one skilled in the art to dye the fiber of Lin as modified by the Hoyt teachings in order to produce a nylon fiber which has color depth yet is resistant to staining. Other advantages of having an undyed sheath/dyed core fiber include the fiber being colorfast to washing, UV, and bleach, and abrasion resistant since the dye of the core is protected by the undyed sheath. Therefore, claims 20, 23, and 25-27 are rejected as being obvious over the cited prior art.

11. Claim 21 is rejected under 35 USC 103(a) as being unpatentable over the cited Lin, Hoyt, and Segraves patents, as applied to claim 20 above, and in further view of the cited Anton patent or US 5,468,555 issued to Lijten.

Lin, Hoyt, and Segraves do not disclose trilobal filaments. However, it is well-known in the art to have trilobal cross-sectional shapes in bicomponent carpet filaments for the purposes of increasing bulk and improving soiling characteristics. As noted above, Anton and Lijten teach trilobal filaments as carpet fibers. Hence, it would have been instantly obvious to one of ordinary skill in the art to practice the conceptual invention of Lin, Hoyt, and Segraves with trilobal filaments, motivated by the expectation of providing a higher quality fiber due to increased yarn bulk, improved soiling characteristics, and desirable visual characteristics. Therefore, claim 21 is rejected as being obvious over the cited prior art.

Response to Arguments

12. Applicant's arguments filed in the Appeal Brief have been fully considered but they are not persuasive.

13. Applicant traverses the rejection over Segraves in view of Lin by asserting "Segraves is not concerned at all with providing an anti-staining sheath/core filament" (Brief, paragraph spanning pages 5-6). As such, appellant believes "based on Segraves, one of ordinary skill in this art would not be lead to the presently claimed" invention (Brief, sentence spanning pages 5-6). In response, it is first noted that the rejection is not over Segraves alone, but rather Segraves in combination with the Lin reference. One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Secondly, it is argued that the focus of the Segraves invention may not be to provide an anti-staining sheath/core filament, but the fact that Segraves teaches a nylon sheath which is lightly colored or substantially undyed by acid dyes automatically means Segraves teaches an "anti-staining sheath/core filament" in that the staining referred to by applicant is staining by acid dyes found in common food and beverages. [Note the only difference between applicant's staining and acid dyeing is that the former is by accident while the latter is intentional. The chemical reaction and the final product is the same: a nylon fiber having acid dye molecules bonded to the available amine end groups of said nylon.]

Applicant also asserts that Segraves' teaching of "lighter" in color cannot be suggestive of the claimed "essentially undyed" sheath (Brief, page 6, lines 3-5). In response, it is noted that applicant is not claiming an "essentially undyed" sheath, but rather a sheath that is "substantially undyed." The two terms are not necessarily equivalent. "Substantial" has been found to be a broad term. *In re Nehrenberg*, 126 USPQ 383. It is the examiner's position that "substantially undyed" encompasses fibers that are "lightly colored." Additionally, it is believed that the reference teaching that the dye 'partitions preponderantly' to the core polymer (Segraves, col. 4, line 19) results in a sheath that is clearly "substantially undyed."

Applicant traverses the Lin reference by stating "Lin does not suggest at all that the therein disclosed sheath/core filament may be acid-dyed such that the core is dyed by an acid dye in a dye bath by migrating physically through the sheath (i.e., so the sheath remains substantially undyed)" (Brief, page 6, 1st paragraph). Once again, the rejection is not over Lin alone, but rather Segraves in combination with the Lin reference. One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references.

Applicant concludes the traversal of the Segraves and Lin rejection by stating "even if Lin were to be combined with Segraves, the present invention would not result" (Brief, page 6, 2nd paragraph). Specifically, applicant believes "such a combination would not be suggestive of a method whereby a stain-resistant nylon sheath/core filament may be made having an essentially undyed nylon sheath and an acid-dyed nylon core" (Brief, page 6, 2nd paragraph). This statement is somewhat confusing to the examiner since it appears to be clear that Segraves teaches a sheath/core nylon filament wherein the core is acid-dyed while the sheath remains substantially undyed by said acid dye. A sheath material that is not dyed by acid dyes in an acid dyebath must have a relatively low AEG concentration. Additionally, said undyed sheath is automatically "stain-resistant" to acid dyes found in food and beverages since it has such a low AEG concentration. Therefore, applicant's arguments are found unpersuasive and the above rejection of claims 20, 23, and 25-27 is maintained.

14. Applicant traverses the rejection of claim 21 over Segraves and Lin in view of Anton or Lijten by relying upon the argument against the rejection of claim 20 by Segraves and Lin (Brief, page 6, section 2). Specifically, applicant asserts Anton and Lijten do not "cure the deficiencies of Segraves" (Brief, last sentence of page 6 and 1st paragraph, page 7). First, it is reiterated that the rejection of claim 20 is not over Segraves alone. Secondly, Anton and Lijten are not relied upon to teach the limitations of claim 20, but only to teach the trilobal limitation of claim 21. Thirdly, since, as discussed above, the examiner does not believe any deficiencies exist in the rejection of claim 20 over Segraves in view of Lin.

Applicant also asserts that Anton actually teaches away from the claimed invention in that Anton teaches an AEG concentration of 15-40 meq/kg for a basic-dyeable, nylon sheath (Brief, page 7, 2nd paragraph). In response, in the present rejection, Anton is relied upon merely for its teaching of sheath/core trilobal fibers in carpets. As such, the cited Anton reference does not teach away from the present invention.

With respect to Lijten, applicant asserts the reference is "even less pertinent to the present invention" than those previously discussed, yet admits that the reference teaches trilobal filaments (Brief, page 7, 3rd paragraph). Lijten's teaching that trilobal sheath/core filaments are desirable in carpets is all the pertinence required from the reference in the present rejection. Since there is not a deficiency in the Segraves and Lin rejection of claim 20, Lijten, along with Anton, need not attempt to cure anything. Therefore, applicant's arguments with respect to the rejection of claim 21 are also found unpersuasive and the above rejection is maintained.

15. Applicant traverses the rejection of claims 20, 21, 23, and 25-27 over Anton in view of Lin by reiterating that Anton teaches away from the claimed invention with its teaching of a sheath AEG concentration of 15-40 meq/kg (Brief, paragraph spanning pages 7-8). Specifically, applicant asserts "Anton discloses that such a sheath polymer having the AEG content stated is important to ensure its dyeability by basic dyes" (Brief, page 8, lines 1-2). Yes, its true that Anton teaches the sheath nylon must have a relatively low AEG concentration in order to be basic dyeable. However, what applicant repeatedly fails to understand is that by definition, a nylon that is basic dyeable has a relatively low AEG concentration. As such, also by definition, said basic dyeable nylon remains substantially undyed when subjected to an acid dyebath and is stain-resistant to acid dyes commonly found in food and beverages. Thus, Anton clearly teaches these aspects of applicant's invention. What Anton fails to teach is the very low AEG concentration presently claimed. Hence, the argument was presented in the above rejection that it would have been obvious to manipulate the result effective variable of AEG concentration to achieve a desired level of dyeability or resistance to acid dyeability. Thus, Anton in no way teaches away from the claimed low AEG concentration in that the required basic dyeability is equivalent to being non-dyeable by acid dyes and in that Anton teaches AEG concentrations are a result effective variable with respect to acid dyeability. Therefore, applicant's arguments are found unpersuasive and the rejection of the claims over Anton in view of Lin is maintained.

16. Applicant traverses the rejection of claims 20, 23, and 25-27 over Lin, Hoyt, and Segraves by asserting that since Lin is silent with respect to an AEG concentration of its sheath polymer there is no suggestion at all to go looking for another polymer having the claimed AEG concentration (Brief, page 8, 1st paragraph of section 4). In response, Lin's objective is to

provide a stain resistant sheath/core nylon carpet fiber. As such, one skilled in the art readily understands that a low AEG concentration of the sheath polymer is advantageous to providing resistance to acid dye staining. Thus, it would be obvious to one skilled in the art to employ such a low AEG nylon as that disclosed by Hoyt for the sheath polymer of Lin in order to further enhance the fiber's resistance to acid dyes by blocking the amine end group acid dye sites.

Applicant also argues that Hoyt requires the stain resistant nylon to be sulphonated (Brief, page 8, 1st paragraph of section 4). This argument is unpersuasive since the claims presently on appeal before the Board do not limit the nylon to being non-sulphonated. [Note related applications 08/715,724 and 09/860,061 contain claims drawn to sulphonate-free nylons.] Additionally, applicant's argument is incorrect in that Hoyt clearly teaches lactone-based blocking agents are suitable for both non-sulphonated nylons and sulphonated nylons (Hoyt, col. 5, lines 15-42, col. 9, lines 45-68, and col. 10, Table 1).

With respect to the role of Segraves in the present rejection, applicant argues "all that Segraves has recognized is that, "under 'certain condition,' a blend of nylon 6-12/6 polymer accepts dye readily while a nylon 6-12 polymer sheath does not" (Brief, page 8, 2nd paragraph of section 4). This statement as an argument against the present rejection is not quite understood since applicant's claims include a core of nylon 6 blends and a sheath of nylon 6/12 homopolymer, wherein the core is readily dyeable by acid dyes while the sheath is not. Thus, applicant seems to be admitting that Segraves teaches these features of the present invention, rather than arguing against the rejection. Therefore, applicant's arguments are found unpersuasive and the above rejection is maintained.

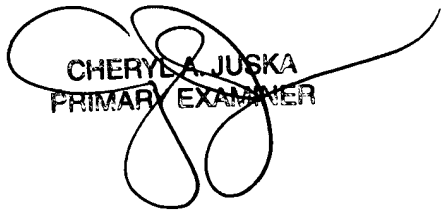
17. Applicant traverses the rejection of claim 21 over the combined art of Lin, Hoyt, Segraves in further view of Anton or Lijten by asserting that Anton and Lijten do not cure the deficiencies of the Lin, Hoyt, and Segraves rejection (Brief, page 9, 1st paragraph). Since said "deficiencies" have been adequately traversed above and found to be non-existent, the rejection of claim 21 is also maintained.

18. In summary, the presently claimed invention is held to be obvious over the various combinations of prior art. Specifically, it has been shown that it is known in the art to form a nylon sheath/core fiber comprising about 10% or less sheath polymer, wherein the core polymer has a relatively high AEG concentration while the sheath has a relatively low AEG concentration. Additionally, it has been shown that a nylon core can be dyeable by acid dyes, while the sheath will remain substantially undyed by said acid dyes. Since AEG concentration is a measure of the functional groups available for bonding to acid dye molecules, said AEG concentration is directly related to the dyeability of nylon by acid dyes. By definition, a nylon with a relatively high AEG concentration is acid dyeable, while a low AEG concentration renders a nylon that is basic dyeable or acid dye resistant, including staining by acid dyes found in food and beverages. Hence, applicant's stain resistant, acid dyed, sheath/core nylon fiber is found to be obvious over the prior art.

Conclusion

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cheryl Juska whose telephone number is 571-272-1477. The examiner can normally be reached on Monday-Friday 10am-6pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached at 571-272-1478. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

20. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



cj
May 22, 2006